

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Status of Claims:

Claim 2 is currently being cancelled, whereby the features of now-canceled claim 2 have been incorporated into presently pending claim 1.

Claims 1, 3-6 and 31 are currently being amended.

Claim 40 is currently being added.

This response cancels, adds and amends claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claims remain under examination in the application, is presented, with an appropriate defined status identifier.

After canceling, adding and amending the claims as set forth above, claims 1, 3-9, 24, 28, 31, 32, 36 and 40 are now pending in this application, whereby claims 10-23, 25-27, 29, 30, 3-35 and 37-39 are withdrawn from consideration.

Objection to Claim 31:

In the Office Action, claim 31 was objected to because it depended from some withdrawn claims. By way of this amendment and reply, claim 31 has been amended to remove its dependencies on withdrawn claims.

35 U.S.C. § 112, 2nd Paragraph Rejection of Claims 5 and 6:

In the Office Action, claims 5 and 6 were rejected under 35 U.S.C. § 112, 2nd paragraph, for the reasons set forth on page 3 of the Office Action. By way of this amendment and reply, claim 5 has been amended to clarify that the bypass circuit has the same component structure as the optical amplifier, and claim 6 has been amended to clarify that there is one 4-port circulator that is optically connected to the first optical connector, the second optical connector and the bypass circuit. Accordingly, presently pending claims 5 and 6 are believed to fully comply with 35 U.S.C. § 112, 2nd paragraph.

Claim Rejections – Prior Art:

In the Office Action, claims 1-5, 7, 8 and 24 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,214,728 to Shigematsu et al.; and claims 28 and 31 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shigematsu et al.; claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Shigematsu et al. in view of U.S. Patent No. 6,377,393 to Saeki; and claims 9, 32 and 36 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shigematsu et al. in view of U.S. Patent Publication No. 2004/0086246 to Kosaka et al. These rejections are traversed for at least the reasons given below.

In its rejection of claim 2, whereby those features are now incorporated into presently pending independent claim 1, the Office Action incorrectly asserts that Shigematsu teaches a first optical 3-port circulator and a second optical 3-port circulator as claimed. As recited in original claim 2, whereby those features are now incorporated into presently pending independent claim 1, the first and second optical 3-port circulators each have a third port for which a signal light input through the third port is not output through any ports (that is, not output through the first port, the second port, or the third port).

As clearly seen in Figure 3(b) of Shigematsu, his circulator 20 has an X-port, a Y-port and a Z-port. A signal input through the X-port is output through the Y-port; a signal input through the Y-port is output through the Z-port; and a signal input through the Z-port is output through the X-port. Thus, as clearly seen in Figure 3(b) combined with Figure 3(a) of Shigematsu, none of his three ports has a feature such that a signal input to that port is not output through any of the other ports.

Accordingly, presently pending independent claim 1 is not anticipated by and is not obvious over Shigematsu.

With respect to dependent claims 3 and 4, those claims recite a first optical filter having first, second and third ports, with specific features of those ports further recited in those claims. The Office Action incorrectly asserts that Shigematsu's circulator 20 meets the limitations recited in claims 3 and 4.

In Shigematsu, a signal from a central office 20 is provided to a subscriber 30 by way of an optical circuit 7, whereby a signal from the subscriber is provided to the central office

by way of a bypass circuit 8. See Figures 1, 2a, 2b, 3a and 3b of Shigematsu, and the description of those figures in the specification of Shigematsu.

Now, a signal from the central office 20 that is input to the circulator 21, with its destination being the subscriber 30, is input to port X of the circulator 21 and is output through port Y of the circulator 21. A signal from the subscriber 30 that is input to the circulator 21, with its destination being the central office 20, is input to port Z of the circulator 21 and is output through port X of the circulator. There are no signals that are input to port Y of the circulator 21, whereby even if there were signals provided to port Y of the circulator 21, they would be output through port Z of the circulator 21.

In any event, it is clear that Shigematsu's circulator 21 does not meet the specific limitations recited in claims 3 and 4, since there is no port in Shigematsu's circulator 21 in which a signal light comprised of a signal light having a first wavelength band and a signal light having a second wavelength band, combined to each other, is input and output. Rather, port X of Shigematsu's circulator 21 inputs signals of a first wavelength band as provided from the central office 20, and outputs signals of a second wavelength band as provided from the subscriber 30 (by way of the bypass path 8); port Y of Shigematsu's circulator inputs signals of the second wavelength band as provided from the subscriber 30, and outputs signals of the first wavelength band (whereby those signals were input to port X); and port Z of Shigematsu's circulator 21 inputs and outputs signals of the second wavelength band as provided from the subscriber 30 (by way of port Y).

Also, as is clear from the above, Shigematsu's circulator 21 does not have a first port and a third port in which signal light of a first wavelength band and a second wavelength band, respectively, are input and output.

Accordingly, claims 3 and 4 are not anticipated by and is not obvious over Shigematsu.

With respect to presently pending independent claim 6, that claim now recites that optical signals amplified by said optical amplifier are capable of being directed to either said first port of said 4-port circulator or said second optical input/output line.

In Saeki, which is utilized in the Office Action to allegedly teach a 4-port circulator, while such a teaching is shown in Figure 11 of Saeki, signals that pass through Saeki's optical amplifier 21 must enter the first port 33 of the 4-port circulator 3, and thus are not capable of

being directed to either said first port of said 4-port circulator or said second optical input/output line.

Accordingly, presently pending independent claim 6 is patentable over the combined teachings of Shigematsu and Saeki.

With respect to presently pending independent claims 24 and 28, those claims recite features similar to those discussed above with respect to claim 1, and thus claims 24 and 28 are not anticipated by and are not obvious over Shigematsu.

Still further, with respect to independent claim 28, the Office Action asserts that "it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Shigematsu with the second identical module and the necessary corresponding connections, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art." Applicant respectfully disagrees with this assertion, since Shigematsu teaches away from using a same structure for supplying remote excitation light to his optical amplifier, due to his use of a semiconductor laser 75 in an AGC loop (see column 6, line 65 to column 7, line 3 of Shigematsu). To add components to this 'simple' structure of Shigematsu would not be a mere design choice to one of ordinary skill in the art.

It is also noted that Kosaka et al., which is applied in combination with Shigematsu with respect to claims 9, 32 and 36, does not rectify the above-mentioned shortcomings of Shigematsu and of Saeki.

New Claim:

New claim 40 has been added to specifically recites features related to which paths signals from a first source and a second source travel, and also which path remote excitation-light travels. It is noted that Shigematsu does not teach any specifics about his remote excitation-light, and thus the features recited in claim 40 are believed to patentably distinguish over that reference, as well as over the other cited art of record.

Conclusion:

Since all of the issues raised in the Office Action have been addressed in this Amendment and Reply, Applicant believes that the present application is now in condition for allowance, and an early indication of allowance is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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